

blue tree snails of the southwest coast, I obtained several of them from residents of Chokoloskee. These were *Oxystyla floridensis* pure and simple, and they had been boiled in water containing a little indigo. We made a number of specimens of this new species aboard the boat in the same way and they were just as nice as those sold by the natives. This receipt is absolutely free to anyone desiring to make new species.

NEW FORMS OF PLEISTOCENE MOLLUSKS FROM ILLINOIS.

BY FRANK C. BAKER.*

A recent examination of Pleistocene material from Grundy County, Illinois, submitted by Mr. Harold E. Culver, of the Illinois State Geological Survey, reveals several new forms of mollusks which seem to need recognition. Upwards of twenty species and varieties occur in the marl deposit, which is post-Wisconsin in age.

AMNICOLA LUSTRICA GELIDA n. var.

Shell differing from *lustrica* in being narrower, with more convex whorls, more deeply impressed sutures, a smaller, rounder aperture, the lip of which is usually thickened within. There are six full whorls in adult individuals.

Length, 4.25; diameter, 2.25; aperture length, 1.25; width, 1.0 mm. Topotype, Collection Museum of Natural History, U. of I., No. P926.

Length, 4.50; diameter, 2.30; aperture length, 1.40; width, 1.0 mm. Paratype. Museum No. P927.

Length, 4.0; diameter, 2.50; aperture length, 1.50; width, 1.10 mm. Paratype. Museum No. P927.

Types from near Morris, Grundy County, Illinois, in marl deposit.

This small *Amnicola* is one of the most abundant species in Pleistocene deposits, and seems to be widely distributed,

* Contribution from the Museum of Natural History, University of Illinois, No. 16.

occurring in Ohio as well as in the known Illinois localities, Chicago, Joliet, and Grundy County. In a previous paper (Journ. Geol., XXVIII, p. 448, 1920) it was listed as *Amnicola lustrica* variety, its differentiation having been suggested by Dr. Pilsbry. It is so markedly different from *lustrica* as found recently, and as represented in some marl deposits, that a name seems very necessary.

Three forms of *Amnicola* related to *lustrica* have come under the writer's observation. The typical form, wide, with moderately convex whorls and a large body whorl; this is in the collection of the Museum from Milwaukee, Wis. (30th Street); a wide form like the type but with thickened lip and solid shell; specimens of this form have been seen from Randolph County, Indiana; and the form herein described, which is narrower and more scalariform than the type. These all represent, probably, different types of environments. The likeness of *gelida* to *Amnicola oneida* Pilsbry, from Oneida Lake, N. Y. (NAUTILUS, XXXI, p. 46, 1917) is striking, and suggests that *oneida* may be the recent manifestation of the fossil form. It will be remembered that the old Rome outlet, in use for the discharge of the waters of the Great Lakes, was by way of Oneida Lake, and western species had easy access to this waterway.

AMNICOLA LEIGHTONI Baker.

This recently described Pleistocene *Amnicola* (NAUTILUS, XXXIII, p. 125, 1920) also occurred in the Grundy County material. The shells are more variable in Illinois than in the type locality in Logan County, Ohio, the spire being long or short and the body whorl varying greatly in obeseness. Continued study of this species in comparison with the Maine species (*winkleyi*) lead the writer to consider the fossil form as a distinct species, as indicated above.

VALVATA TRICARINATA Say.

This common species is most abundant in nearly all lacustrine and fluviatile deposits of the Pleistocene period. Like the recent shells, it varies greatly in the carinate condition of

the shell. On the whole, the fossil individuals appear to be more variable than the recent forms. The variations in carination have been recognized to some extent and names have been applied to the most striking of these variations. Seven combinations are apparently possible. These are indicated in the following table:

Tricarinate	<i>tricarinata</i> Say.
Middle carina absent	<i>perconfusa</i> Walker.
Upper and lower carinæ absent	<i>unicarinata</i> DeKay.
Lower carina absent	<i>basalis</i> Vanatta.
Middle and upper carina absent	<i>infracarinata</i> Vanatta.
Middle and lower carina absent	<i>supracarinata</i> Baker.
All carinæ absent	<i>simplex</i> Gould.

VALVATA TRICARINATA SUPRACARINATA n. var.

Shell differing from the other described varieties of the tricarinate series in lacking the carina on the periphery and base. Otherwise similar. Length, 3.5; width, 4.5; aperture length, 2.0; width, 1.8 mm. Topotype, Collection Museum of Natural History, U. of I., No. P928. Type locality, near Morris, Grundy County, Illinois.

This variation is apparently rare, as but four specimens were found in sorting several hundred *tricarinata*. In the deposit under study (Grundy County) the *perconfusa* form was in much greater abundance, followed by the *tricarinata* form. See NAUTILUS, XV, p. 124; XXXI, p. 36; XXVIII, pp. 104, 105, for descriptions of the other variations of this polymorphic species.

SOME CENTRAL AMERICAN SPECIES OF NAIDES, BELONGING OR ALLIED TO THE GENUS ELLIPTIO.

BY A. E. ORTMANN, PH. D.

Frierson (NAUTIL. 27. '13, p. 14) has described a new species as *Unio* (*Nephronaias*) *ortmanni*, and says that it "is clearly placed in the *Nephronaias* division by its evident near kinship to *melleus* Lea and to *persulcatus* Lea".